

The Bottom Line -- Pollution Prevention Opportunities

Pollution Prevention Boosts Profits

Preventing pollution by eliminating and reducing toxic materials and hazardous wastes helps the environment. But did you know that it also saves money, increases your company's efficiency, and improves the bottom line?

Responsibility To Prevent Releases

Hazardous substances must be safely managed to protect workers, neighbors, and the environment. Regulations require contingency plans and measures to prevent accidental releases. Eliminating or reducing toxic chemicals to prevent accidental releases is a wise decision, both socially and financially.

Cost Allocation

Many prevention projects are simple and inexpensive, but some require major changes. Managers often have difficulty justifying large investments. This is because the costs of hazardous chemicals and wastes are often allocated to overhead, and are therefore hidden. Facilities that account for the costs of using, managing, and disposing of toxic substances separately have an average of three times as many pollution prevention projects as facilities that don't!

Hidden Costs

There are many hidden costs in using hazardous chemicals. For example:

- Permits
- Monitoring and inspections
- Reporting and record keeping
- Safety and health concerns
- Protective equipment
- Material and disposal costs
- Spill reporting
- Public image
- Potential fines and penalties
- Long-term liability

Direct Costs

Any investment evaluation involves the consideration of direct costs, including:

- Capital expenditures -
 - buildings
 - equipment
 - materials
 - installation
 - engineering
 - labor

- site preparation
- procurement

Operation and maintenance -

- labor
- transportation
- storage
- upkeep
- disposal

Benefits of Pollution Prevention

However, direct and hidden costs provide only part of the picture. Benefits and avoided costs should also be considered. These benefits may include:

- Reduced material costs
- Accident and injury prevention
- Community relations
- Reduced regulatory costs
- Private property protection
- Reduced insurance costs
- Decreased disposal costs

Analyzing Avoided Costs

The costs avoided or reduced may include:

- Spill liability
- Wildlife and habitat damage
- Property devaluation
- Long term liability
- Remediation costs
- Civil and criminal fines
- Process disruption
- Down time

Evaluate All Costs and Benefits

Consider the hidden and direct costs of hazardous materials use and disposal, and the indirect benefits and cost avoidance gained through using pollution prevention. This evaluation can help facility managers document that pollution prevention improves their bottom line.

Arizona Success Stories

Electric Equipment Manufacturer

Substituting aqueous cleaning eliminated 165 gal/yr. of solvents. Changes in training, equipment, and processes reduced water and gas use. Sludge reuse reduced nickel and cadmium in sludge sent off site for incineration by 757 lb/yr. Reusing electrolytes saved 3,252 gal/yr and reduced

raw material purchases by 50%. Saved \$550,000 over two years.

Aerospace Manufacturer

Ion exchange treatment reduced plating waste by 650,000 gal/yr. Gray water recycling reduced wastewater 676,000 gal/yr. Water-based degreasers eliminated 111,000 gal/yr of TCE. Saved \$136,813 over two years.

Defense Manufacturer

Eliminated 99,915 lb/yr of 1,1,1-TCA and reduced scrap propellant by 78% since 1990. Recycled 21,422 lb. of ammonium perchlorate and 600 lb. of silver-containing materials since 1992. Switched to non-hazardous solvents and cleaners. Saved \$181,000 over three years.

Musical Instruments Manufacturer

Hazardous waste decreased 58%, from 48 tons in 1992 to 20 tons in 1995. A closed loop system reduced water use by 500,000 gallons per year, cut lab fees, and decreased sludge generation. Eliminating TCE reduced hazardous waste and air pollution. Saved \$127,000 during the first year.